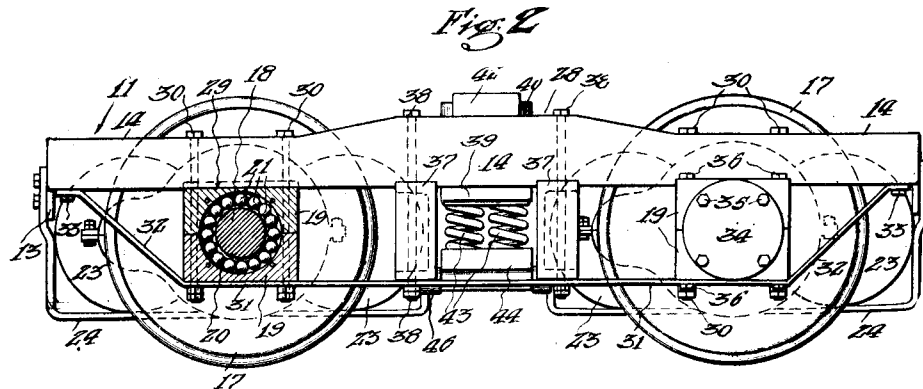
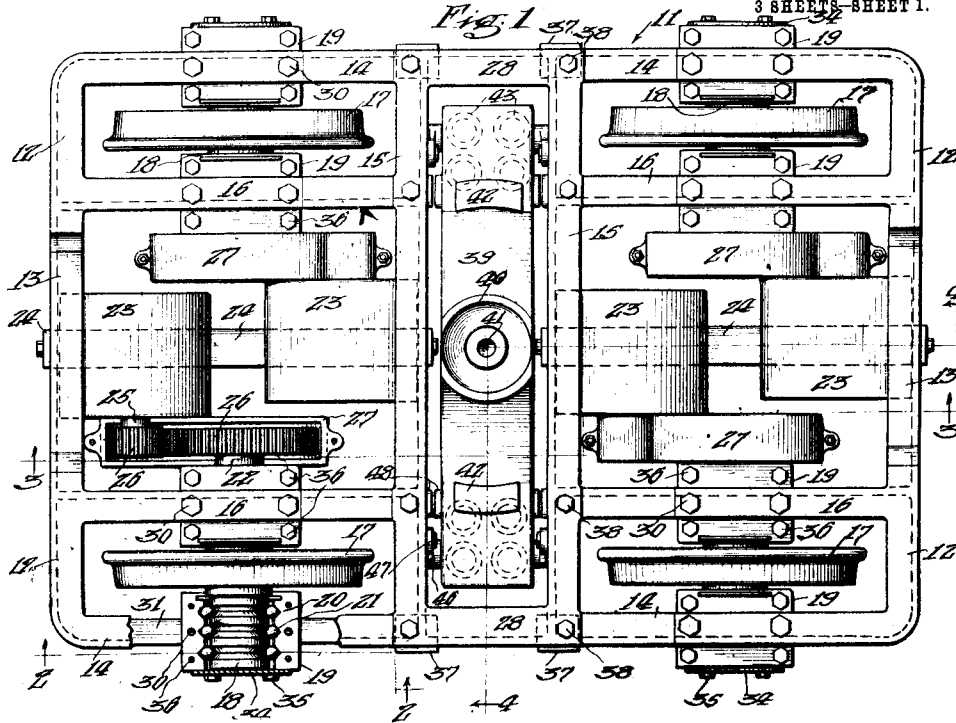


W. H. ARMSTRONG.
RAILWAY CAR TRUCK.
APPLICATION FILED DEC. 26, 1912.

1,059,102.

Patented Apr. 15, 1913

3 SHEETS-SHEET 1.



Witnesses:
William H. Armstrong
W. M. Gault.

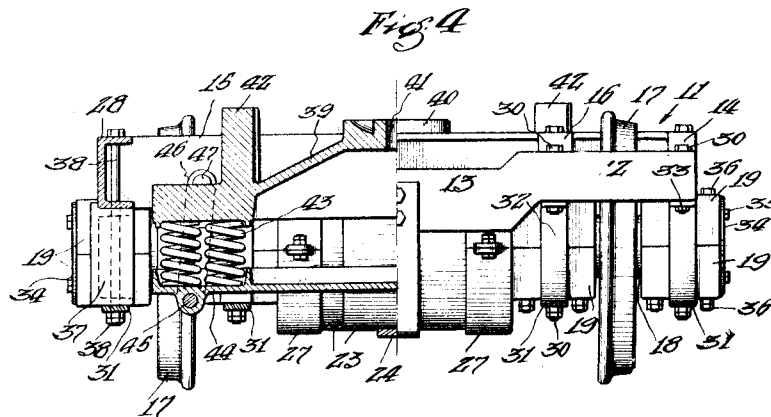
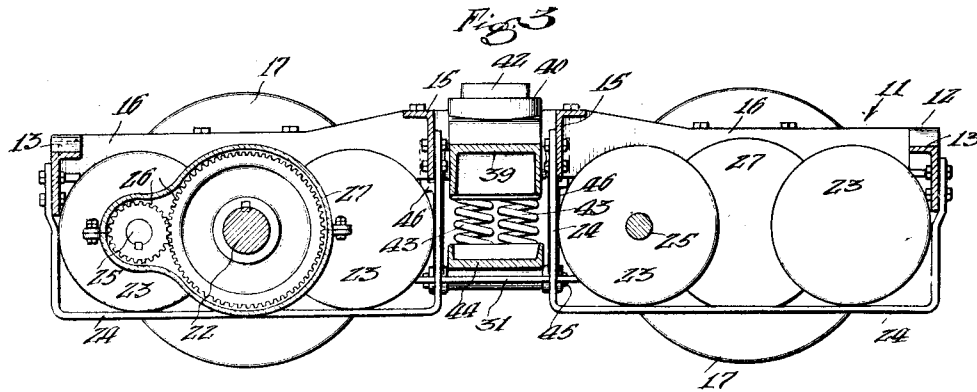
Inventor:
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3 SHEETS-SHEET 2.



Witnesses:
William H. Armstrong
H. M. Gentle

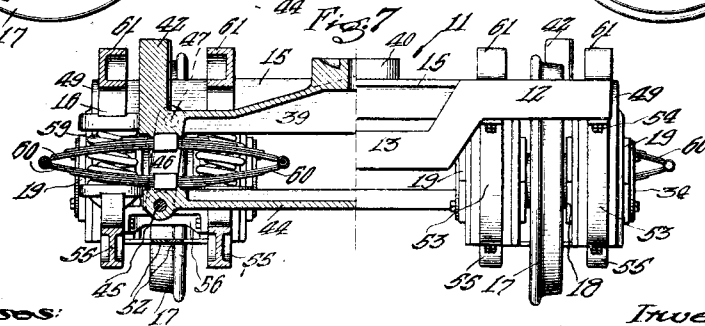
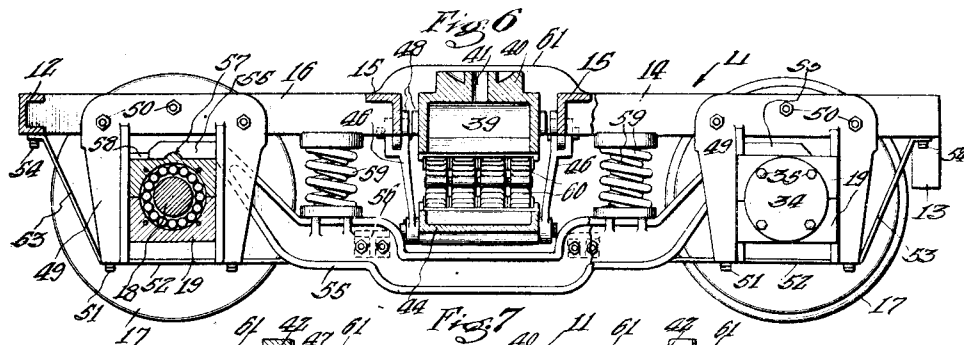
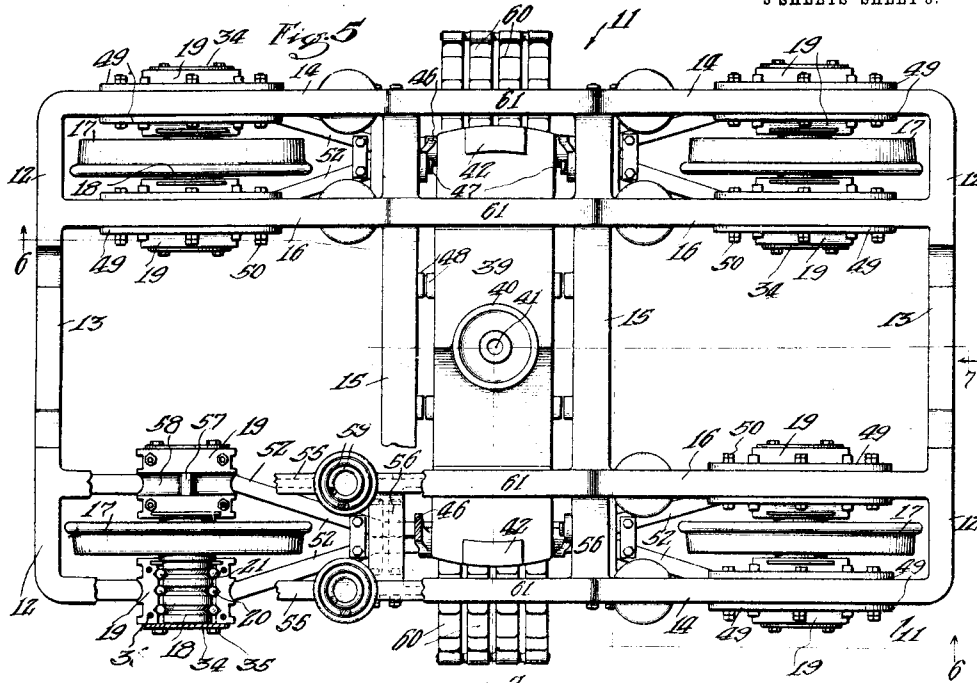
Inventor:
William H. Armstrong
Alex. N. Lidders
Attorney

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3 SHEETS-SHEET 3.



Witnesses:
Wm. M. Gentle
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Inventor:
William H. Armstrong
Alfred N. Lidders
his attorney

UNITED STATES PATENT OFFICE.

WILLIAM H. ARMSTRONG, OF LOS ANGELES, CALIFORNIA.

RAILWAY-CAR TRUCK.

1,059,102.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed December 26, 1912. Serial No. 738,759.

To all whom it may concern:

Be it known that I, WILLIAM H. ARMSTRONG, a citizen of the United States of America, residing at Los Angeles, in the county of Los Angeles, State of California, have invented a certain new and useful Railway-Car Truck; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same.

This invention relates to improvements in railway-car trucks, and it may be said to consist in the provision of the novel and advantageous features and in the novel and improved construction, arrangement, and combination of parts and devices as will be apparent from the description and claims which follow hereinafter.

One object of the invention is to provide a novel and improved car truck in which the wheels are adapted to rotate independently of each other.

Another object of the invention is to provide a novel and improved construction for mounting the wheels independently of each other on the frame.

Another object of the invention is to provide novel and improved construction and arrangement for the wheel shafts and the bearings therefor.

Further objects of the invention are to provide a construction for the truck which renders it simple in character, efficient in use, economical to manufacture, install, and maintain, strong and durable, easy running both on straight and curved tracks, adapted to avoid excessive heat of the shafts or their bearings, and in which the parts can be quickly assembled and also easily demounted for renewal or repair.

Other objects and the advantages of the invention will be apparent to those skilled in the art from a consideration of the following description of preferred forms of construction embodying the invention, taken in connection with the accompanying drawings in which,

Figure 1 is a partly broken plan view of a truck embodying the invention; Fig. 2 is a side elevation of the truck, with a portion thereof shown in section taken on the line 2—2 of Fig. 1; Fig. 3 is a longitudinal sectional view taken on the line 3—3 of Fig. 1; Fig. 4 is a view of the truck, partly in end elevation and partly in section taken on the

line 4—4 of Fig. 1; Fig. 5 is a partly broken plan view of another form of truck embodying the invention; Fig. 6 is a partly sectional view taken on the line 6—6 of Fig. 5; and Fig. 7 is another view of the truck shown in Figs. 5 and 6, partly in end elevation and partly in section taken on the line 7—7 of Fig. 5.

Like parts are designated by similar characters in the several views.

The top member 11 of the truck is preferably made in one piece of cast steel and formed to provide end portions 12 having the central part 13 thereof depressed to afford clearance for draw-bars and brake-rods, outer side portions 14 connected by spaced cross portions 15, and inner side portions 16 spaced from and in parallel with the outer side portions 14. Between the outer side portions 14 and the inner side portions 16 of the top member 11 are arranged the wheels 17 having on each side thereof stub shafts 18 which are adapted to fit in bearing blocks 19 suitably carried by the top member 11. As shown, each of the stub shafts 18 and the bearing blocks 19 are formed to provide a plurality of raceways 20 therein, and balls 21 are disposed in the raceways 20 to be interposed between the stub shafts 18 and the bearing blocks 19 to effect a multiple ball bearing for the stub shafts 18.

As seen in Figs. 1, 2, 3 and 4, the stub shafts 18 on the inner side of the wheels 17 are provided with extensions 22, and the wheels 17 may be independently driven by means of motors 23 mounted on supports 24 which are arranged between the end portions 12 and the cross portions 15 and secured by bolts 17'; the shafts 25 of the motors 23 being connected to the extensions 22 by means of gearings 26 in the housings 27. The outer side portions 14 and the inner side portions 16 of the top member 11 are preferably channel form, and the side portions 14 may have the central part 28 thereof of increased height, Fig. 2. The upper of the two-part bearings 19 are provided with a groove 29 whereby they are fitted over the lower end portion of the side portions 14 and 16, and bolts 30 may be passed through the side portions 14 and 16 and through the bearing blocks 19 and through supporting bars 31 on the under side of the lower of the bearing blocks 19; the supporting bars 31 having the end portions 32 thereof inclined

upwardly and secured to the side portions 14 and 16 by bolts 33. Hard grease or other suitable lubricating material may be placed in the raceways 20, and cover plates 34 may be affixed on the sides of the bearing blocks 19 by means of suitable screw-bolts 35. Additional bolts 36 may be passed through the bearing blocks 19 to assist in holding together the complementary parts of the bearing blocks. Between the supporting bars 31 and the side portions 14 and cross portions 15 are fitted spacing blocks 37 secured in position by means of bolts 38 passing through the side portions 14 and cross portions 15 and through the spacing blocks and the supporting bars 31. Between the cross portions 15 is swingably mounted the yieldingly supported bolster 39 which is provided with a center plate 40—having the usual opening 41 for the king bolt, not shown—and with upwardly projecting stop blocks 42.

As seen in Figs. 1, 2, 3 and 4, the bolster 39 may be mounted on coiled springs 43 resting on supporting plate 44 having thereon pivot rods 45 to which are connected one end of arms 46; the other end of the arms 46 being mounted on pivots 47 on the cross portions 15. Suitable co-acting stops or buffers may be provided on the bolster 39 and cross portions 15.

In the construction shown in Figs. 5, 6, and 7 the bearing blocks 19 are slidably mounted in guide-frames 49 which have the upper end thereof secured to the side portions 14 and 16 of the top member 11 and have the lower end thereof resting on the straps 52 to which they are secured by screw bolts 51. The end portions 53 of the straps 52 are upwardly inclined and secured to the end portions 12 by bolts 54. Equalizers 55, cross-connected in pairs by bars 56, have the end portions thereof fitted over projections 57 in the grooves 58 in the top of the bearing blocks 19; suitable springs 59 being disposed between the equalizers 55 and the side portions 14 and 16. In this case the bolster 39 is mounted on elliptic leaf springs 60 instead of on coiled springs 43, and the part of the side portions 14 and 16 above the bolster 39 are formed to provide arches 61 to permit of raising the bolster 39 so that the springs 60 are easily accessible for renewal or repairs.

While various forms of trucks embodying the invention have been particularly illustrated and described, there are many changes and modifications in the construction thereof that will readily occur to those skilled in the art, wherefore the right is reserved to all such changes and modifications as do not depart from the spirit and scope of the invention as defined in the appended claims.

I claim:

1. A railway car truck, comprising a top member, a bolster carried by the top mem-

ber, wheels, stub shafts on opposite sides of each of the wheels, supporting bars affixed to the top member, bearing blocks for each end portion of said stub shafts arranged between the top member and the supporting bars, said stub shafts and said bearing blocks formed to provide a plurality of raceways therein, and balls arranged in said raceways, substantially as described.

2. A railway car truck, comprising a top member, a bolster carried by the top member, wheels, stub shafts on the sides of each of the wheels, bearing blocks for the stub shafts carried by the top member, extensions on the inner stub shafts, motors carried by the top member, and operative connections between the motors and said extensions.

3. A railway car truck, comprising a top member, a bolster carried by the top member, wheels, stub shafts on the sides of each of the wheels, bearing blocks carried by the top member, said stub shafts and said bearing blocks formed to provide raceways therein, balls arranged in said raceways, extensions on the inner stub shafts, motors carried by the top member, and operative connections between the motors and said extensions, substantially as described.

4. A railway car truck, comprising a top member formed to provide end portions, and outer side portions, and inner side portions spaced from the outer side portions, and spaced cross portions connected between the inner and outer side portions, a bolster carried by the cross portions, wheels arranged between the outer and inner side portions, stub shafts on opposite sides of each of the wheels, supporting bars affixed to the top member, bearing blocks for each of the stub shafts arranged between said supporting bars and said outer and inner side portions of the top member, and bolts passing through said outer and inner side portions, bearing blocks, and supporting bars.

5. A railway car truck, comprising a top member consisting of end portions, and outer side portions, and inner side portions spaced from the outer side portions, and cross portions connected between the inner and outer side portions, a bolster carried by the cross portions, wheels arranged between the outer and inner side portions, stub shafts on the sides of each of the wheels, bearing blocks for each end portion of the stub shafts carried by said outer and inner side portions, said stub shafts and said bearing blocks formed to provide raceways, and balls arranged in said raceways, substantially as described.

6. A railway car truck, comprising a top member consisting of end portions, and outer side portions, and inner side portions spaced from the outer side portions, and spaced cross portions connected between the inner and outer side portions, a bolster car-

ried by the cross portions, wheels arranged between the outer and inner side portions, stub shafts on the sides of each of the wheels, bearing blocks for the stub shafts 5 carried by the inner and outer side portions, extensions on the inner stub shafts, motors carried by the top member, and operative connections between the motors and said extensions, substantially as described.

10 7. A railway car truck, comprising a top member formed to provide end portions having the central part thereof depressed, and outer side portions, and inner side portions spaced from the outer side portions, 15 and cross portions connected with the inner and outer side portions, a bolster carried by the cross portions, wheels arranged between the outer and inner side portions, stub shafts on the sides of each of the wheels, bearing 20 blocks for the stub shafts carried by said outer and inner side portions, said stub shafts and said bearing blocks formed to provide raceways, balls arranged in said raceways, extensions on the inner stub 25 shafts, motors carried by the top member, and operative connections between the motors and said extensions, substantially as described.

8. A railway car truck, comprising a one- 30 piece top member of cast steel formed to provide end portions, and outer side portions, and inner side portions spaced from the outer side portions, and spaced cross portions connected with the outer and inner 35 side portions, a supporting plate swingably mounted on the cross portions, springs resting on the supporting plate, a bolster mounted on the springs, said side portions formed with arches above the bolster for the purpose set forth, wheels arranged between the 40 outer and inner side portions, stub shafts on the sides of each of the wheels, bearing blocks for the stub shafts carried by said inner and outer portions, said stub shafts 45 and said bearing blocks formed to provide raceways therein, and balls arranged in said raceways, substantially as described.

9. A railway car truck, comprising a top member formed to provide end portions, and outer side portions, and inner side portions spaced from the outer side portions, and cross portions connected with the inner and outer side portions, a supporting plate swingably mounted on the cross portions, springs resting on the supporting plate, a 55 bolster mounted on the springs, said side portions formed with arches above the bolster for the purpose set forth, blocks removably interposed between the bolster and said arches, wheels arranged between the outer 60 and inner side portions, stub shafts on the sides of each of the wheels, and bearing blocks for the stub shafts carried by said inner and outer side portions, substantially as described. 65

10. A railway car truck, comprising a one-piece top member of cast steel formed to provide end portions, and outer side portions, and inner side portions spaced from the outer side portions, and cross portions 70 connected with the inner and outer side portions, a supporting plate carried by the cross portions, springs resting on the supporting plate, a bolster mounted on the springs, said side portions formed with arches above the 75 bolster for the purpose set forth, wheels arranged between the outer and inner side portions, stub shafts on the sides of each of the wheels, bearing blocks for the stub shafts carried by the inner and outer side portions, 80 said stub shafts and said bearing blocks each formed to provide a plurality of raceways therein, and balls arranged in said raceways, substantially as described.

In testimony whereof, I have signed my 85 name to this specification in the presence of two subscribing witnesses at Los Angeles county of Los Angeles, State of California, this 18th day of December A. D. 1912.

WILLIAM H. ARMSTRONG.

Witnesses:

FRED A. MANSFIELD,
ALEX. H. LIDDERS.